

#  
2

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/517,052  
Source: PGT/10  
Date Processed by STIC: 12/17/04

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PCT

## RAW SEQUENCE LISTING

DATE: 12/17/2004

PATENT APPLICATION: US/10/517,052

TIME: 16:06:40

Input Set : A:\sequence listing-biomay.txt

Output Set: N:\CRF4\12172004\J517052.raw

3 <110> APPLICANT: Biomay Produktions- und Handels-Aktiengesellschaft  
 5 <120> TITLE OF INVENTION: Allergenic protein from mugwort pollen  
 7 <130> FILE REFERENCE: Allergenic protein from mugwort pollen  
 C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/517,052  
 C--> 10 <141> CURRENT FILING DATE: 2004-12-03  
 12 <160> NUMBER OF SEQ ID NOS: 10  
 14 <170> SOFTWARE: PatentIn Ver. 2.1  
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 17 <211> LENGTH: 396  
 18 <212> TYPE: PRT  
 19 <213> ORGANISM: Artemisia vulgaris  
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 23 1 5 10 15  
 25 Val Gly Ala Ala Ala Arg Ala Asp Ile Gly Asp Glu Leu Glu Ala Ala  
 26 20 25 30  
 28 Gln Phe Asn Ser Thr Arg Arg Gly Leu His Glu Cys Ala Ala His Asn  
 29 35 40 45  
 31 Ile Ile Asp Lys Cys Trp Arg Cys Lys Ala Asp Trp Glu Lys Asn Arg  
 32 50 55 60  
 34 Gln Ala Leu Ala Lys Cys Ala Gln Gly Phe Ala Lys Gly Thr Thr Gly  
 35 65 70 75 80  
 37 Gly Leu Gly Gly Glu Ile Tyr Val Val Thr Asp Cys Ser Asp Asp Asn  
 38 85 90 95  
 40 Ala Ala Asn Pro Lys Pro Gly Thr Leu Arg Cys Gly Val Thr Gln Asp  
 41 100 105 110  
 43 Lys Pro Leu Trp Ile Ile Phe Lys Lys Asp Met Val Ile Lys Leu Lys  
 44 115 120 125  
 46 His Glu Leu Val Ile Asn Lys Asp Lys Thr Ile Asp Gly Arg Gly Ala  
 47 130 135 140  
 49 Asn Val Glu Ile Thr Cys Gly Gly Leu Thr Ile His Asn Val Cys Asn  
 50 145 150 155 160  
 52 Val Ile Ile His Asn Ile His Ile His Asp Ile Lys Val Thr Glu Gly  
 53 165 170 175  
 55 Gly Ile Ile Lys Ala Thr Asp Ala Lys Pro Gly His Arg His Lys Ser  
 56 180 185 190  
 58 Asp Gly Asp Gly Ile Cys Val Ala Gly Ser Ser Lys Ile Trp Ile Asp  
 59 195 200 205  
 61 His Cys Thr Leu Ser His Gly Pro Asp Gly Leu Ile Asp Val Thr Leu  
 62 210 215 220  
 64 Gly Ser Thr Ala Val Thr Ile Ser Asn Cys Lys Phe Ser His His Gln  
 65 225 230 235 240  
 67 Lys Ile Leu Leu Leu Gly Ala Asp Asn Ser His Val Asp Asp Lys Lys

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73 Arg Met Pro Arg Cys Arg Phe Gly Phe Phe Gln Val Val Asn Asn Asp
74          275          280          285
76 Tyr Thr Ser Trp Gly Thr Tyr Ala Ile Gly Gly Ser Ala Asn Pro Thr
77          290          295          300
79 Ile Leu Ser Gln Gly Asn Arg Phe His Ala Pro Asn Asp Pro Met Lys
80 305          310          315          320
82 Lys Asn Val Leu Val Arg Ala Asp Ala Pro His Thr Glu Ser Met Lys
83          325          330          335
85 Trp Asn Trp Arg Ser Glu Lys Asp Leu Leu Glu Asn Gly Ala Ile Phe
86          340          345          350
88 Val Ala Ser Gly Cys Asp Pro His Leu Thr Pro Glu Gln Lys Ser His
89          355          360          365
91 Leu Ile Pro Ala Glu Pro Gly Ser Ala Val Leu Gln Leu Thr Ser Cys
92          370          375          380
94 Ala Gly Thr Leu Lys Cys Val Pro Gly Lys Pro Cys
95 385          390          395
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99 <211> LENGTH: 1188
100 <212> TYPE: DNA
101 <213> ORGANISM: Artemisia vulgaris
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106 ttacacgaat gtgcagcaca taacataata gacaagtgtt ggaggtgcaa agctgattgg 180
107 gaaaaaaacc gacaagcatt agccaaatgc gcgcaagggt ttgcaaaggg aacaactggc 240
108 ggattgggag gggaaatcta cgtggtgact gattgttcag atgacaatgc tgcaaatcca 300
109 aagccagggg cacttcgttg tgggtgtcacc caagataaac ctttgtggat catctttaag 360
110 aaagatatgg tcataaaact taaacacgag cttgtgataa acaaagacaa gacaattgat 420
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112 gtgatcattc ataacattca catacatgat attaaagtaa ccgaagggtg aattattaag 540
113 gcaacggacg ctaaaccagg acatagacat aagagcgacg gagatgggtat ttgtgttgct 600
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116 aaaattctat tactcggagc agacaattca catgtagacg ataaaaaaat gcatgtcaca 780
117 gtagcattca acaggttcgc agaagcatgt gatcaaagaa tgccacgatg tcgatttgga 840
118 tttttccaag ttgttaacaa tgactacacc agctggggaa cgtacgccat tgggtgtagt 900
119 gccaatccta ctatccttag ccaaggcaac cgattccatg ctccgaatga cccaatgaag 960
120 aaaaatgtgt tggtaggggc tgatgcacca catacagagt caatgaagtg gaattggaga 1020
121 tctgagaaag acttgtaga aaatggagct atattttag catcaggggtg cgacccgcac 1080
122 ctaaccccg aacaaaaaag ccatttgatt ccagctgaac caggatcagc agttcttcaa 1140
123 ctcaccagtt gtgctggcac gctcaaatgc gttcctggaa aaccttgt 1188
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127 <211> LENGTH: 1188
128 <212> TYPE: DNA
129 <213> ORGANISM: Artemisia vulgaris
131 <400> SEQUENCE: 3

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132 atggaaaaaac attattttgt tatattgttc accgcagcgt ttgttttcgt ggggtgcagct 60
133 gctcgggctg acattggtga tgagctcgaa gcggtcfaat ttaattcaac aaggagggggc 120
134 ttacacgaat gtgcagcaca taacataata gacaagtgtt ggaggtgcaa agctgattgg 180
135 gaaaaaaaacc gacaagcatt agccaaatgc gcgcaagggt ttgcaaaggg aacaactggc 240
136 ggattgggag gggaaatcta cgtggtgact gattgttcag atgacaatgc tgcaaatcca 300
137 aagccagggg cacttcgttg tgggtgacac caagataaac ctttgtggat catcttcaag 360
138 aaagatatgg tcataaaact taaacacgag cttgtgataa acaaagacaa gacaattgat 420
139 ggaagagggtg caaatgttga gatcacttgt ggcggtctca ccattcacaa cgtttgcaat 480
140 gtgatcattc ataacattca catacatgat attaaagtaa cggaagggtg aattattaag 540
141 gcaacggacg ctaaacaggg gcatagacat aagagcgacg gagatggtat ttgtgttgct 600
142 ggttcttcga agatatggat cgatcattgc acacttagtc atggtccaga tggccttatt 660
143 gatgtcacgt tgggtagcac agccgttacc atttccaatt gcaaatttag ccatcaccaa 720
144 aaaattctat tactcggagc agacaattca catgtagacg ataaaaaaat gcatgtcaca 780
145 gtcgcattca acagggtcgc agaagcatgt gatcaaagaa tgccacgatg tcgatttggg 840
146 tttttccaag ttgttaacaa tgactacacc agctggggaa cgtacgccat tgggtggtagc 900
147 gccaatccta ctatccttag ccaaggcaac cgattccatg ctcccaatga cccaatgaag 960
148 aaaaatgtgt tggtaggggc tgatgcacca catacagagt caatgaagtg gaattggaga 1020
149 tctgagaaaag acttggttaga aaatggagct atattttag catcaggggtg cgaccgcgat 1080
150 ctaacccccg aacaaaaaag ccattttaatt ccagctgaac caggatcagc agttcttcaa 1140
151 ctcaccagtt gtgctggcac gctcaaatgc gttcctggaa aaccttgt 1188

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155 &lt;211&gt; LENGTH: 41

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157 &lt;213&gt; ORGANISM: Artificial Sequence

159 &lt;220&gt; FEATURE:

160 &lt;223&gt; OTHER INFORMATION: Description of Artificial Sequence: Primer

162 &lt;400&gt; SEQUENCE: 4

163 gagagagacc atggctcggg ctgacattgg tgatgagctc g 41

166 &lt;210&gt; SEQ ID NO: 5

167 &lt;211&gt; LENGTH: 42

168 &lt;212&gt; TYPE: DNA

169 &lt;213&gt; ORGANISM: Artificial Sequence

171 &lt;220&gt; FEATURE:

172 &lt;223&gt; OTHER INFORMATION: Description of Artificial Sequence: Primer

174 &lt;400&gt; SEQUENCE: 5

175 gagagagact cgagttaaca aggttttcca ggaacgcatt tg 42

178 &lt;210&gt; SEQ ID NO: 6

179 &lt;211&gt; LENGTH: 1523

180 &lt;212&gt; TYPE: DNA

181 &lt;213&gt; ORGANISM: Artemisia vulgaris

183 &lt;400&gt; SEQUENCE: 6

184 ggaattcggc acgagaaatc tacaaaaatt gataaaaata aaaataacaa agcgagtcac 60

185 tggcttgcat acatggctac atgattcgct ttagacaaca caataaataa tcagcaatat 120

186 ataaagtacc ttcggtactt tgagatagaa agttgtaaaa aaagataatc atacaatata 180

187 atggaaaaaac attattttgt tatattgttc accgcagcgt ttgttttcgt ggggtgcagct 240

188 gctcgggctg acattggtga tgagctcgaa gcggtcfaat ttaattcaac aaggagggggc 300

189 ttacacgaat gtgcagcaca taacataata gacaagtgtt ggaggtgcaa agctgattgg 360

190 gaaaaaaaacc gacaagcatt agccaaatgc gcgcaagggt ttgcaaaggg aacaactggc 420

191 ggattgggag gggaaatcta cgtggtgact gattgttcag atgacaatgc tgcaaatcca 480

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Output Set: N:\CRF4\12172004\J517052.raw

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194 ggaagagggtg caaatgttga gatcacttgt ggcggtctca ccattcacaa cgtttgcaat 660
195 gtgatcattc ataacattca catacatgat attaaagtaa ccgaagggtg aattattaag 720
196 gcaacggacg ctaaacagg acatagacat aagagcgacg gagatggat ttgtgttgct 780
197 ggttcttcaa agatatggat cgatcattgc acacttagtc atggtccaga tggccttatt 840
198 gatgtcacgt tgggtagcac agccgttacc atttccaatt gcaaatttag ccatcaccaa 900
199 aaaattctat tactcggagc agacaattca catgtagacg ataaaaaat gcatgtcaca 960
200 gtagcattca acagggttcgc agaagcatgt gatcaaagaa tgccacgatg tcgatttgga 1020
201 tttttccaag ttgttaacaa tgactacacc agctggggaa cgtacgccat tgggtggtagt 1080
202 gccaatccta ctatccttag ccaaggcaac cgattccatg ctccgaatga cccaatgaag 1140
203 aaaaatgtgt tggtgagggc tgatgcacca catacagagt caatgaagtg gaattggaga 1200
204 tctgagaaaag acttgtaga aaatggagct atattttag catcaggggtg cgacccgcac 1260
205 ctaacccccg aacaaaaaag ccatttgatt ccagctgaac caggatcagc agttcttcaa 1320
206 ctaccagtt gtgctggcac gctcaaagtc gttcctggaa aaccttgta atagttatca 1380
207 cccacttttt tttttattg ttattagcat tttttatact tgtaggatt gtagtggaat 1440
208 gagacattga tacgtgcatt acaagaccat tcatcaacat attttgctac tatcacatgt 1500
209 tcacgttaaa aaaaaaaaaa aaa 1523
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213 <211> LENGTH: 1513
214 <212> TYPE: DNA
215 <213> ORGANISM: Artemisia vulgaris
217 <400> SEQUENCE: 7
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219 gtcattggct tgcatacatg gctacatgat tcgctttaga caacacaata aataatcagc 120
220 aatatataaa gtaccttcgg tactttgaga tagaaagttg taaaaaaga taatcataca 180
221 atacaatgga aaacattat tttgttatat tgttcaccgc agcgtttgtt ttcgtgggtg 240
222 cagctgctcg ggctgacatt ggtgatgagc tcgaagcggc tcaatttaat tcaacaagga 300
223 ggggcttaca cgaatgtgca gcacataaca taatagacaa gtgttgaggg tgcaaagctg 360
224 attgggaaaa aaaccgacaa gcattagcca aatgcgcgca aggttttgca aagggaacaa 420
225 ctggcggatt gggaggggaa atctacgtgg tgactgattg ttcagatgac aatgctgcaa 480
226 atccaaagcc agggacactt cgttgtggtg tcaccaaga taaacctttg tggatcatct 540
227 ttaagaaaga tatggtcata aaacttaaac acgagcttgt gataaacaaa gacaagacaa 600
228 ttgatggaag aggtgcaaat gttgagatca cttgtggcgg tctcaccatt cacaacgttt 660
229 gcaatgtgat cattcataac attcacatac atgatattaa agtaaccgaa ggtggaatta 720
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232 ttattgatgt cacgttgggt agcacagccg ttaccatttc caattgcaaa tttagccatc 900
233 accaaaaaat tctattactc ggagcagaca attcacatgt agacgataaa aaaatgcatg 960
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236 gtagtgccaa tctactatc cttagccaag gcaaccgatt ccatgctccg aatgacccaa 1140
237 tgaagaaaaa tgtgttggtg agggctgatg caccacatac agagtcaatg aagtgggaatt 1200
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239 cgcattcaac cccggaacaa aaaagccatt tgattccagc tgaaccagga tcagcagttc 1320
240 ttcaactcac cagttgtgct ggcacgctca aatgcgttcc tggaaaacct tgtaaatagt 1380
241 tatcacccac tttttatttt tattgttatt agcatttttt atacttgta ggattgtagt 1440
242 ggaatgagac attgatacgt gcattacaag accattcatc aacatatatt gctaaaaaaa 1500
243 aaaaaaaaaa aaa 1513

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PATENT APPLICATION: US/10/517,052

TIME: 16:06:40

Input Set : A:\sequence listing-biomay.txt

Output Set: N:\CRF4\12172004\J517052.raw

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249 <213> ORGANISM: Artemisia vulgaris
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253 aaaaataaaa ataaaaataa caaagcgagt cattggcttg catacatggc tacatgattc 120
254 gctttagaca acacaataaa taatcagcaa tatataaagt accttcggta ctttgagata 180
255 gaaagtgtga aaaaaagata atcatacaat acaatggaaa aacattattt tgttatattg 240
256 ttcaccgcag cgtttgtttt cgtgggtgca gctgctcggg ctgacattgg tgatgagctc 300
257 gaagcggctc aatttaattc aacaaggagg ggcttacacg aatgtgcagc acataacata 360
258 atagacaagt gttggaggtg caaagctgat tgggaaaaaa accgacaagc attagccaaa 420
259 tgcgcgcaag gttttgcaaa gggaaacaact ggcggtattg gaggggaaat ctacgtggtg 480
260 actgattgtt cagatgacaa tgctgcaaat ccaaagccag ggacacttcg ttgtggtgtc 540
261 acccaagata aacctttgtg gatcatcttc aagaaagata tggtcataaa acttaaacac 600
262 gagcttgatg taaacaaaga caagacaatt gatggaagag gtgcaaagtgt tgagatcact 660
263 tgtggcggtc tcaccattca caacgtttgc aatgtgatca ttcataacat tcacatacat 720
264 gatattaaag taacggaagg tggaattatt aaggcaacgg acgctaaacc agggcataga 780
265 cataagagcg acggaatggg tatttgtgtt gctggttctt cgaagatatg gatcgatcat 840
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269 tgtgatcaaa gaatgccacg atgtcgattt ggatttttcc aagttgttaa caatgactac 1080
270 accagctggg gaacgtacgc cattggtggt agcgccaatc ctactatcct tagccaaggc 1140
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274 attccagctg aaccaggatc agcagttctt caactcacca gttgtgctgg cacgctcaaa 1380
275 tgcgttcttg gaaaaccttg ttaatatgta tcaccactt tttattttta ttgttattag 1440
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287 ctacaaaaat tgataaaaaat aaaaataaaa ataacaaagc gagtcattgg cttgcataca 120
288 tggctacatg attcgcttta gacaacacaa taaataatca gcaatatata aagtaccttc 180
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293 aagcattagc caaatgcgcg caagggtttg caaagggaac aactggcgga ttgggagggg 480
294 aaatctacgt ggtgactgat tgttcagatg acaatgctgc aaatccaaag ccagggacac 540
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297 atgttgagat cacttggtggc ggtctcacca ttcacaacgt ttgcaatgtg atcattcata 720
298 acattcacat acatgatatt aaagtaaccg aaggtggaat tattaaggca acggacgcta 780

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**VERIFICATION SUMMARY**

PATENT APPLICATION: **US/10/517,052**

DATE: 12/17/2004

TIME: 16:06:41

Input Set : **A:\sequence listing-biomay.txt**

Output Set: **N:\CRF4\12172004\J517052.raw**

L:9 M:270 C: Current Application Number differs, Replaced Application Number  
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date